

# **BOARD OF CODE STANDARDS AND APPEALS**

## **MINUTES**

**August 1, 2005**

**Members:** Francisco Banuelos, Andy Bias, Randy Harder, Richard Hartwell, Bernie Hentzen, Ed Murabito, Warren Willenberg, Scot Wolfington, John Youle

**Present:** Banuelos, Harder, Hartwell, Hentzen, Willenberg, Wolfington, Youle

**Absent:** Bias, Murabito

**Staff Members Present:** Kurt Schroeder, Deb Legge, Maria Bias, Ray Sledge, Elaine Hammons

The regular meeting of the Board of Code Standards and Appeals was called to order by Chairman Wolfington on Monday, August 1, 2005, at 1:32 p.m. in the 1st floor Board Room, City Hall, 455 N. Main, Wichita, Kansas.

### **1. Approval of the Minutes from the July, 2005, meeting.**

A motion was made by Board Member Hartwell, seconded by Board Member Willenberg, to approve the minutes of the July meeting as submitted. Motion carried.

### **2. Approval of the August, 2005, license examination applications.**

There were no applications for license examination for the month of August.

### **3. Condemnation Hearings**

#### **Review Cases**

#### **1. 635 W. Hendryx**

Joann Tejeda was present to represent this property.

On July 11, 2005, Ms. Tejeda and her brother, Richard Chavez appeared before the Board to give an update this property. At that time, a motion was made and approved to allow until the August 1, 2005, hearing to either have the exterior repairs complete or to reappear before the Board.

Ms. Legge informed the Board that after a site inspection was performed by Central Inspection staff, it was determined that most all repairs were finished.

The staff recommendation was that the property be returned to regular code enforcement.

Board Member Youle made a motion to return the property to regular code enforcement. The motion was seconded by Board Member Harder. The motion carried, unopposed. (Board Member Banuelos was absent during this vote.)

## **2. 1155 N. Spruce**

Barbara Shugart, the daughter of the deceased owner, was present to represent this property.

Ms. Shugart contacted Ms. Legge the previous week to notify her of the status of the legal proceedings regarding the transfer of ownership of this property. The property is still in probate, Ms. Shugart explained, but she anticipated that she would have control of the premises in approximately sixty days.

The taxes are current on the property. The premise conditions are fair, with only a small amount of debris; the structure is secure except for a window that is partially open, which probably would not allow for access into the building.

Chairman Wolfington inquired whether Ms. Shugart had been given a more definite time frame for the transfer of the property. She responded that the attorney for the estate of her mother told her that it would be six months from the time of her mother's death before the court would allow Ms. Shugart to take possession of the property. Taking that time period in to account, Ms. Shugart said that it would be October of 2005 before she had control of the premises. Her intent is and has been to provide reasonable maintenance to the site, such as mowing and keeping it cleared of debris, until the probate court transfers the property to her.

Board Member Hartwell asked what Ms. Shugart's long term plans were for the property. Ms. Shugart told the Board that the property had been a long time family home, and that she was hoping to repair it and eventually move into it.

Since ownership of the property would not be transferred to Ms. Shugart until October, 2005, at the earliest, Board Member Hartwell expressed concern that there would be no substantial repairs made in the interim. He asked how long it would be once the property was transferred to Ms. Shugart before progress would be made on the repairs. She said that she did not want to spend money on any repairs until she is certain that the property will be transferred to her as the owner. Therefore, she would not begin the necessary repairs until some time after the first part of October, 2005. Board Member Hartwell inquired whether she felt that work would be commenced by the November, 2005, hearing. Ms.

Shugart replied that she would begin the repair work immediately upon gaining control of the property.

A motion was made by Board Member Hartwell to allow until the November hearing to complete the repairs on the property or reappear before the Board. Board Member Willenberg seconded the motion. The motion passed, unopposed.

### **“Unfit for Habitation”**

#### **2001 N. Minneapolis**

No one appeared before the Board on behalf of this property.

Ms. Legge told the Board that this property was currently in a “holding pattern.” The contractor was scheduled to meet with the area building inspector to find out whether there were corrections still needed on the framing from a prior inspection, or if the corrections that had been made were in compliance with the minimum building code requirements. If the corrections had been made to the inspector’s satisfaction, the contractor would continue with the work and complete the repairs. Although she had not received word of the inspection results by the time of the meeting, Ms. Legge said that the building inspector had been scheduled to meet with the contractor on site that morning to reinspect the framing.

Photographs of the current condition of the structure were shown to the Board. The damaged area has been closed up with plywood and is now weather tight. The area housing inspector has recommended that the property be returned to regular code enforcement.

Board Member Youle made a motion to refer the property back to regular code enforcement. The motion was seconded by Board Member Harder. The motion was approved unanimously.

#### **4. Request for consideration of VertiForce as an alternate to current reinforcement requirements for basement standards.**

Ray Sledge, Construction Inspector Supervisor, from the Office of Central Inspection introduced Mr. Scott Jones of SI Concrete Systems to the Board. Mr. Jones was accompanied by Mike Kircher with R-Con, a local supplier of the VertiForce product.

Mr. Jones began by explaining to the Board that he had been discussing with Mr. Sledge the possible use of a product called Novomesh VertiForce. It is basically a bag of blended product containing nineteen pounds of steel fibers with one pound of a fibrillated fiber. At two bags per dosage rate, it can replace rebar in the field of a wall, horizontal and vertical, both above and below grade. The product itself has ICBO approval for use above grade. Mr. Jones told the Board that the VertiForce product has been tested and approved by independent testing labs for use above grade; he said that in addition to the test data, the company also has engineering letters from around the country where the product has been approved for use below grade.

Even with the use of the fiber reinforcement system, windows and doors or any type of lintel openings have to be wrapped with rebar. The test data indicates that the fiber reinforcement outperforms No. 4 rebar on 18" centers when exposed to hurricane-force winds. The product first came about approximately eight years ago when an engineer in Florida asked SI Concrete Systems if he could obtain steel fibers from the company in order to do some testing in that region. The company granted his request and was again contacted by the engineer, who invited the company to send some representatives to the area where the testing was being done. The engineer told them that their product was outperforming rebar in the tests for hurricane-reinforced walls. At that point the product was primarily used in the market for insulated concrete homes with 4" – 6" walls.

Mr. Jones said that the test data is based on use for 4" – 6" walls, so extrapolation is required to calculate the amount of product needed for 8' walls. However, the fiber system provides twice the amount of reinforcement versus rebar because the steel/synthetic fibers are from side to side and top to bottom.

Currently, there is not an ICBO approval for use of the Novomesh product below grade in formed flat panel wall systems. Mr. Jones said that SI Concrete Systems originally felt that it would be cost-prohibitive to explore that particular market, so they did not pursue the ICBO testing for that use. Ultimately, the company discovered that in regions where there is a requirement for No. 4 rebar on 18" centers, the use of VertiForce is actually price competitive as an alternative to rebar. With that in mind, Mr. Jones said, SI Concrete Systems is seeking approval to use their product to replace the rebar in the field of the walls in below grade applications.

Board Member Willenberg asked if footings had to be doweled into the wall even with the use of Novomesh. Mr. Jones confirmed that the footings had to be doweled into the wall; he also said that 10 feet was the maximum height allowed for the wall.

Chairman Wolfington asked if VertiForce was approved for ICF (Insulating Concrete Forms) applications below grade. Mr. Jones said that at least three manufacturers had provided approval letters for the use of the product in their ICF applications.

Chairman Wolfington requested Board Member Hartwell's opinion of the product and its proposed use. A structural engineer by profession, Board Member Hartwell, said that Mr. Jones had come to his office and they had discussed some aspects of the product application prior to the Board meeting. Board Member Hartwell said that although he had looked through the information that he had received in his Board packet and had discussed the product with Mr. Jones, he still had questions regarding its use.

Board Member Hartwell requested clarification on the data referring to deflection. Chairman Wolfington also raised the question of how the standard of allowable deflection was determined, whether it was specifically stated in the building code or if it is specified by the type of rebar required. Board Member Hartwell also asked for an explanation of the phrase "hurricane design."

Mr. Jones explained that "hurricane design" was based on the stamina of a four-inch wall in a wind test of 150 m.p.h., which would be the equivalent of a class four or class five hurricane. The use of that particular test data is being used because SI Concrete Systems has no other test data available. There is a below grade calculator that the corporation uses that based on the loads of the homes and the soil conditions (fluid density of the soil) that is used to determine whether the material meets the necessary requirements. When the design was originated, the fluid density was based on 35 lbs. per square foot. Using the calculations on that load with the VertiForce product, the data is sufficient. Above 50 lbs. per square foot, Mr. Jones said they were probably in soil conditions that they should not be in, and he questioned whether even the use of No. 4 rebar on 18" centers would provide sufficient reinforcing at those times.

There have been ICF homes done in the Kansas City market, particularly one typical straight flat panel wall home, where they have received very good results and have not run into any questions or problems. One of the benefits has been that there has been a lot less cracking in the walls because of the steel fiber reinforcement.

As far as test data for below grade applications outside of what is provided from wind loads, static loads and testing that has been done in the ICF applications, there is no additional data available because the company did not foresee this type of market for use below grade. There are areas where the product is approved for below grade applications such as in the city of Phoenix, the states of Colorado and Iowa. In those instances, most require No. 4 rebar on 24" or 36" centers, so there is not enough reinforcement added to make the VertiForce

price competitive. In Illinois the walls are built eight inches thick without reinforcement. Board Member Hartwell mentioned that the different requirements depend on the soil conditions in the area.

Board Member Hartwell inquired whether SI Concrete Systems could have testing of the product done, below grade, to provide more data regarding soil pressure. Mr. Jones agreed that they could probably pursue the testing; however, there is a concern whether the market for below grade use would offset the expense of the testing.

Board Member Hartwell asked what the risks would be to the local jurisdiction for accepting the data as provided and then having the VertiForce system fail in below grade application. Mr. Jones said that the risk would actually fall back to the manufacturer and the ready-mix supplier. Board Member Hartwell pointed out that an engineer's stamp on the product would make that engineer liable in the event of failure. Mr. Jones told the Board that the steel fibers in the VertiForce system do not rust. Even if a piece of the fiber should rust, it would only be a 1 to 1-1/2 inch piece of steel, unlike rebar, where the rust permeates throughout its length. Because the steel fibers are not a continual length as in the case of rebar, there is not a loss of integrity to the strength of the concrete should some of the fibers rust.

Chairman Wolfington asked if the Central Inspection required any (engineer) stamps for one- and two-family dwellings. Mr. Sledge explained that the Board of Code Standards had adopted the use of Basement Standards in October of 1988 for use in all soil types. A committee comprised of foundation crews, contractors and engineers worked together to arrive at the specifications currently in use as the Basement Standards. Mr. Sledge noted that the "18 inch on center" that Mr. Jones had referred to was the requirement for heavy expansive clay areas under the provisions of the Basement Standards. Since the Board of Code Standards and Appeals had originally approved the specifications in use, Mr. Sledge thought that any departure from those accepted standards should be at the Board's discretion.

Mr. Kircher told the Board that as a supplier of the product, he hoped to have the opportunity to do some testing through an outside testing agency. He hopes to have an agency do periodic cylinder samples to build test data. Mr. Jones noted that VertiForce was not recommended to replace reinforcement in all concrete.

Board Member Youle asked about the inside finish of the VertiForce application. Mr. Kircher said that a cylinder that he personally tested came out smooth. The only portion showing any steel was the very top of the cylinder. Mr. Jones added that in pre-cast applications the surface finish was smooth. The fibers are not visible on the surface.

Mr. Kircher said that the floor at the trash reclamation center on West Street across from the paving plant was reinforced with the steel fibers and no rebar. The floor has held up well and there are no fibers visible on the floor surface. Mr. Jones said that using the steel fibers makes a durable, impact resistant floor.

Chairman Wolfington asked Mr. Sledge for his thoughts on the use of the VertiForce product.

Mr. Sledge replied that his concern was the lack of testing on below ground use. He felt that VertiForce was a good product in the application for which it had been tested and approved. There is no certification from ICBO for below grade use, and the approval letter provided from the engineer in New Mexico for below grade use did not specify soil conditions.

Board Member Hentzen asked if Central Inspection would approve the use of VertiForce in below grade applications if an engineer's stamp were provided. Mr. Sledge affirmed that it would be an acceptable product for use in the City of Wichita if stamped by an engineer. Any type of reinforcement that would be required, such as doweling into the footing or wrapping of openings, etc., would need to be inspected by Central Inspection staff.

Board Member Hentzen suggested that it made sense to seek approval on a case-by-case basis under the auspices of a licensed engineer rather than grant a blanket approval of the product's use.

Board Member Hartwell said that as a structural engineer, he would not feel comfortable in stamping the engineering for the product at present. He would need to see more test data for the requested use.

A motion was made by Board Member Harder to table the matter until more information was made available. The motion was seconded by Board Member Willenberg. Motion carried.

The meeting was adjourned at 2:09